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ABSTRACT

Beginning with an extensive overview of theories, this paper proposes an integrative perspective on play. Early theories, which were proposed in the last half of the 19th century, included the surplus energy theory, the recapitulation theory, the instinct-practice theory, and the relaxation theory. More recent theories of play include Freud's and Erikson's psychoanalytic theories and Piaget's cognitive development theory. The limitations on these theories include the fact that: (1) They deal only with specific elements or a limited sampling of the broad concerns of play; (2) They involve single or limited variables; and (3) They are tied to the academic roles of their developers. Problems also exist in adequately defining play. The integrated theory of play proposed in this discussion attempts to lend depth and breadth to understanding play and to provide practitioners with a comprehensive, utilitarian, and unified view of the phenomenon. It is proposed that play be examined from at least five interrelated perspectives: characteristics, motives, processes, functions, and content. Each of these dimensions is considered across academic disciplines in terms of theory and the large volume of recent research on play. It is argued that a fully developed theory can provide comprehensive description of the qualities of play and open up creative possibilities for the design and testing of play environments. A bibliography of 100 references is attached. (CB)

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TOWARD AN INTEGRATED THEORY OF PLAY

Joe L. Frost

Throughout history children have played their way into adulthood, yet, until recently, few adults have regarded children's play as serious or considered play to be important in child development. Plato and Aristotle attached practical significance to play, considering it valuable in learning such subjects as arithmetic and construction skills. Plato's view that children should play out roles expected of adults was a precursor of the preparation for life theory expounded by Groos (1898) in the late nineteenth century.

Play is very old, and it is universal. Archaelogical excavations of ancient Egypt, China, and Peru reveal toys, tops, rattles, dolls, and other playthings made of pottery and metal as well as drawings by adults depicting various play scenes. Anthropological studies of primitive people reveal the existence of play among all cultures and identify several characteristic types: (a) dancing and rhythmic movement, (b) mimicking and acting, (c) singing, (d) conversing and story telling, (e) arts and crafts, (f) games and contests (Mitchell, 1937). One of the most salient characteristics of primitive people and a striking aspect of their play was response to rhythm, especially singing and dancing, which were engaged in by all recorded primitive cultures.

Early Theories of Play

Roots of theory can be traced to Aristotle and Plato, but the first serious efforts at theory building were not seen until the last half of the nineteenth century. As early as the seventeenth century a simple-minded explanation of play was that it was useful as recuperation from work. This

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same notion was elaborated by Schiller and Lazarus in the nineteenth century (Millar, 1968).

The first serious theory of play, the surplus energy theory, originating with Schiller in 1800 (Groos, 1898), was formalized by Spencer (1896), and reiterated by Tolman (1932). Schiller believed that play was the aimless expenditure of exuberant energy. Spencer explained that the organism expends energy either in goal-directed activity (which is work) or nongoal-directed activity (which is play). When the child has more energy than needed for work, play occurs. It is to the credit of both Schiller and Spencer that they recognized the relationship between play and the arts; they viewed play not only as the expression of exuberant energy but also as the origin of art.

A shortcoming of the surplus energy explanation of play is that children frequently play even when in a state of near exhaustion. The notion of surplus energy is based upon circular reasoning (Beach, 1945). When a cat chases, catches, and devours a mouse, energy is expended, but no one suggests that this is surplus energy. When the same cat chases, catches, and chews on a ball, energy is also expended, but this is said to be surplus energy. Because ball chasing serves no practical end, it must be play, but mouse catching is not play. The decision about whether the expended energy is surplus depends upon whether the behavior is considered serious or playful. Therefore, to explain play as the release of surplus energy is to do no more than complete the circle. The speculative writings of Spencer had only limited impact compared with the systematic observations in Charles Darwin's The Origin of The Species (1859).

A second explanation of play, the recapitulation theory, has its origin in Darwin's view that humans evolved from lower species. This theory

holds that the child at play mirrors the behavioral evolution of the species and that play rehearses the activities of the race during forgotten ages (Gulick, 1898). G. Stanley Hall's (1906) interest in both evolution and child psychology led him to formalize the recapitulation theory. Children are a link in the evolutionary chain from animal to man and reenact through play the interests and occupations of prehistoric man and his remote animal ancestors. Water play proved primeval origins in the sea; climbing trees showed vestiges of ape-like ancestors; gang play echoed primitive tribal life.

The recapitulation theory breaks down under modern scrutiny. Piloting space ships and firing laser guns can hardly be considered rehearsal of ancient experiences. There is no tidy linear progression in play that links it to primitive eras, but the theory was a natural outgrowth of the intense interest in the origins of man. Compared with the present time, society at the turn-of-the-century was very simple. Radio, television, airplanes, automobiles, electricity, and other miraculous devices were not available to lend perspective to the play and playthings of children. Fortunately, theory does not have to be correct in order to be useful. As Millar (1968) aptly points out, Hall's theorizing about play had the excellent effect of stimulating interest in children's behavior.

A third major explanation of play, the instinct-practice theory, was elaborated by Groos in The Play of Animals (1898) and in The Play of Man (1901). The concept of play as preparation for adult life was a derivative of earlier instinct theories, which held that play is caused by instinctive need (McDougall, 1923). Like most of his scholarly counterparts of the period, Groos was heavily influenced by the work of Darwin. Animals inherit instinctive behaviors, but practice is needed to perfect them. Kittens

chasing yarn balls become adept at catching mice. Infants learn to control their bodies through crawling, reaching, grasping, and moving.

The child's models are the behaviors of his parents and the occupations of others. In imitating adults, the child tests various possibilities, and this influences his later choice of a life's calling. It is to his credit that Groos (1901) extended his point of view beyond the mere mechanical, preparatory for life activities to approach a contemporary view of play:

> I would remark that imitation is almost never merely that; it is creation as well, production as well as reproduction. Close on the heels of imitation comes imagination. (p. 290)

The impact of early experiences on later life is now well documented. The opportunity or lack of opportunity to play during childhood certainly has consequences for later life. However, Groos proposed that the infant plays in order to train for specific skills. A more accurate view is that "play leads to mastery of self and environment from a general development aspect, that is, personality and intelligence, as opposed to specific skills" (Frost and Klein, 1979/1984, p. 3). Children at play are not concerned with any possible future benefits of their play.

A fourth theory of play, the relaxation theory, was proposed by Patrick (1916). He held that the term play may be applied to all free and spontaneous activities that are pursued for their own sake. Play, he believed, is activity for the relief of mental fatigue brought on by the demands of modern life. Patrick's theory was primarily relevant for adults. He believed that the child's play life is natural and free as contrasted with the strain and inhibitions of adult activities. The relaxation theory is not

necessarily inconsistent with the surplus energy theory, for excess muscular energy can be used up while the brain is being rested.

Recent Theories of Play

The psychoanalytical theory of play has roots in earlier cathartic theory, which proposed that play was an activity for the pursing of unpleasant or painful feelings and emotions. The interest of psychoanalysts in children's play originated with Freud in the early 1900s and was elaborated by Robert Walder (1933) and Erik Erikson (1950).

Freud (1922/1959) explained play as the projection of wishes and the reenactment of unpleasant experiences in order to master them. The assumption that play revealed the inner life and motivation of the child led to the development of projective techniques, such as interpreting ink blots and making up stories from pictures. Freud's influence on play extended to various types of therapy for disturbed children using spontaneous play. In general, Freud believed that children link imagined objects and situations to the tangible and visible things of the real world. Desiring to be grown up and in control, the child converts passive roles into active ones, frequently imitating adult roles where a greater degree of control is exhibited. Through playing out unpleasant experiences, their effect on the child is diminished and he comes to terms with them. The need for play is reduced as the child grows older and greater control is achieved.

Erik Erikson added new dimensions to Freud's work by describing play as developmental progression in which the child adds new and more complex understandings about the world at each stage. We now see for the first time a theory of play that begins to tap play's broad dimensions and potential influences. Erikson's initial stage, autocosmic play, begins at birth. Play is centered on the infant's body and consists of "the exploration by

repetition of sensual perceptions of kinesthetic sensations, vocalizations, etc." (Erikson, 1950, p. 220). Later in this stage the object of the child's play turns to other properties and things. The next stage of play, the microsphere, is a manageable world of toys and objects, a place for the child to visit when his or her ego needs an overhaul. If the child is unable to master this stage he or she may regress to the autocosmic stage, characterized by daydreaming, thumb sucking, or masturbating. The third stage, the macrosphere, occurs at nursery-school age when the child shares play with others. Earlier stages are integrated into this one, so macrosphere play contains elements of the earlier stages. Major tasks of this stage are learning to participate in social play and learning when to engage in solitary play. Solitary play "retains an indispensable harbor for the overhauling of shattered emotions after period of rough going in the social seas" (Erikson, 1950, p. 194).

From a scientific perspective, the chief fault of the psychoanalytic theory, a serious one, is that it is primarily a subjective interpretation of play motives. Erikson's most important contribution to the understanding of play is not in his subjective explanation of motives for play but in his recognition of the uniqueness of play and in his descriptions of play as a developmental phenomenon contributing to mastery of the environment. Erikson (1950) concluded:

> What is infantile play, then? . . . it is not the equivalent of adult play, it is not recreation. The playing adult slips sideward into another reality; the playing child advances forward to new stages of mastery. I propose the theory that the child's play is the infantile form of the human ability to deal with

> experience by creating model situations and to master reality by experiment and planning. (pp. 194-195)

Freud's notion that play is motivated chiefly by the pleasure principle and Erikson's view that the child achieves mastery through play are also basic elements in Piaget's cognitive-developmental theory. Piaget (1962) attributed the initial appearance of play to the pleasure derived from the infant's mastery of his own behavior. Play has a dual role in Piaget's theory. It serves as a vehicle for knowing and as an indicator of the child's cognitive development. In order to understand the significance of Piaget's views of play, they must be linked to his overall theory of intellectual development.

Piaget (1962) views intelligence as the organization of adaptive behavior. Adaptation is the modification of the organism through organism-environment interchange such that further interchanges and, consequently, modifications are enhanced. Adaptation occurs through the reciprocal processes of assimilation and accommodation. Cognitive assimilation is the action of the organism on the surrounding objects; accommodation is the action of the environment upon the organism. In play, reality is molded or bent to the wishes of the child. That is, play is viewed as the assimilation of environmental stimuli with little regard to accommodation. In imitation, on the other hand, the child adapts himself to reality, mimicking or accommodating to the actions of another person.

The developmental progression of play is closely linked by Piaget (1962) to his stages of cognitive development. He built upon the work of Charlotte Buhler (1935) and Karl Buhler (1937) who described the progression of games and assigned labels that are still used in play research (see Table 1).

(Insert Table 1 about here.)

Since Piaget offers the most comprehensive theory available for understanding the intellectual development of children, his integration of play into that framework enhances its applicability for research and practice. Indeed, his theory of play, among those discussed in this paper, stands alone in this respect. Thus far it is the only one subjected to extensive empirical testing.

Limitations of Theory

The limitations of play theory are numerous, confounded by the absence of a clear definition. First, the theories deal only with specific elements or a limited sampling of the broad concerns of play. For example, Piaget's developmental play theory, though broader than most, is encapsulated in his massive theory of cognitive development. Consequently, in order to understand the broad dimensions of play one must study a monumental array of information.

Second, several theories (e.g., surplus-energy, relaxation) involve single or limited variables and, from a scientific perspective, hardly qualify as theory at all. In practice, they have done a great deal of harm. Many practitioners at the present time still consider play a waste of time or an avenue to let off steam, and they construct play environments that are poorly suited to children's cognitive, social, affective, and psychomotor needs.

Third, the theories tend to be tied to the academic roles of their developers. Explanations of play are available from the disciplines of psychology, sociology, anthropology, child development, physical education, art, and education. Specialization has the advantage of isolation of specific variables for study, but such isolation does not necessarily lead to study of integrative elements.

Table 1

Types of Play and Periods of Cognitive Development

Piaget's Period of Cognitive Development	K. Buhler (1937)	Piaget (1962)
Sensorimotor period (0-24 months)	Functional games	Practice games
Concrete operations period	Construction games	Symbolic games
Preoperational subperiod (2-7 years)	Make-believe games	
Concrete operations	Collective games	Games with rules

Note. Adapted from Children's Play and Playgrounds (p. 9) by J. L. Frost and B. L. Klein, 1984, Austin, TX: Playgrounds International (Reprinted from Boston: Allyn & Bacon, 1979). Copyright by J. L. Frost and B. L. Klein. Adapted oy permission.

Steven Hoppes (1984) illustrates these concerns.

> Physical education addresses play when it becomes sport and has physical ramifications. Sociology deals with play when it is an expression of social structure and values. Education takes up the topic when play has a bearing on learning and teaching. And anthropology speaks of play when it is a key to the understanding of the development of humankind. Yet each discipline also accepts, in practice, the multi-faceted nature of the phenomenon of play and the inadequacy of a mono-disciplinal explanation of it. Because of the limitations caused by the rigidity of the classification system of academia, play has been relegated to the periphery of these disciplines' attention. While these four disciplines profess an interest in play, one takes the responsibility of embracing this subject as a specialty. (pp. 3-4)

The result, Hoppes aptly points out, is that a crazy quilt of theories and research has sprung up over the years, and the study of play continues to suffer from a reliance upon antiquated theory, a puritanical bias against play, a quest for seriousness by academicians, and a prevailing view that play is trivial and inconsequential.

Problems in Defining Play

Acknowledging the seriousness of these concerns, a central restriction on efforts to understand play is failure to agree on what play is. A few sample definitions illustrate this point:

Schiller: The aimless expenditure of exuberant energy.

Froebel: The natural unfolding of the germinal seeds of childhood.

Groos: Instinctive practice, without serious intent, of activities

that will later be essential to life.

Dewey: Activities not consciously performed for the sake of any result beyond themselves.

Gulick: What we do because we want to do it.

Stern: Play is voluntary, self-sufficient activity.

Patrick: Those human activities which are free and spontaneous and which are pursued for their sale alone. (Sapora and Mitchell, 1948, p. 114)

In his classic book Homo Ludens (1950) written in 1938, Huizinga said that play is not subject to exact definition logically, biologically, or aesthetically, and Ellis (1973) stated that pure play is only theoretically possible. Hence, we have to restrict ourselves to describing the main characteristics of play.

Huizinga (1950) characterized play in broad terms as necessary for culture, voluntary, irrational, limited in time and space, bound by rules and free of imposed tasks.

> Play is a voluntary activity or occupation executed within certain fixed limits of time and place, according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy and the consciousness that it is "different" from ordinary life. (p. 28)

Huizinga avoided psychological interpretations of play and restricted his inquiry to its creative qualities and its special manifestations, using anthropological terms and explanations.

Piaget (1962), on the other hand, dealt in psychological interpretations. Although he avoided a precise definition, he linked play to his overall cognitive theory, pointing out that "play constitutes the extreme

pole of assimilation to the ego, while at the same time it has something of the creative imagination which will be the motor of all future thought and even of reason" (p. 162).

As this paper is written, scholars continue their inquiries into the meanings of play. In the recent Handbook of Child Psychology, Rubin, Fein, and Vandenburg (1982) used about 450 citations published between 1970 and 1982, with over 50% more recent than 1975. Over 700 articles on play were published between 1880 and 1980, growing from a dozen or so articles a decade before 1930 and accelerating to over 200 during the 1970's (Sutton-Smith, in press).

Sutton-Smith (in press) added new dimensions to the study of play. He proposed that there are two kinds of play--the rational and the irrational. Rational play is studied in the psychology of play and in the playground movement. The contexts for the study and pursuit of rational play are nursery schools, laboratories, and supervised playgrounds. Typically, investigators of rational play explore play and problem solving, play and creativity, play and cognitive development, and play materials and equipment. He argues that "one will get a very limited view of what children's play is about from such studies."

Irrational play, on the other hand, is more characteristic of the play research in folklore and in anthropology. Sutton-Smith (in press) implies that play scholars should follow the lead of early psychoanalytical approaches that dealt with the "disturbed and the deviant . . . and with regressive and animalistic play." His irrational play subjects would include "violent sports, libidinous foreplay, addictive gambling and war games," hardly the subject matter of nursery schools yet obviously relevant objects of study if we are to understand the complex dynamics of the subject. Sutton-Smith does

not suggest that irrational play be our sole object of study: "little league baseball, barbie doll play, playing houses, playing with toy trucks and mobiles hanging over a crib are all a part of the necessary subject-matter we must tackle if we are to deal with play." Play and game concepts are rapidly becoming the source of metaphors for life activities by scientists, politicians, and others and increasingly replacing traditional political and evolutionary concepts for describing human affairs. In these terms "games are neither inherently rational or irrational. They can be both. . . . It is high time to pay it [play] a more cosmic kind of respect." Problems in Theory Building

Contemporary theorists recognize that play is a complex class of behaviors, yet their creative energies have been directed to explaining play essentially within the framework of respective disciplines or interests. Researchers have followed their lead, collecting and analyzing data on explicit categories of play or on patterns of play behavior and effects of play, relevant to specific disciplines rather than across disciplines. As a result, explanations and mountains of data are available, but critical analysis that would explain interrelationships across academic disciplines and corresponding dimensions of play need to be conducted.

Among major disciplines, the need for an integrated theory of play is perhaps greatest in education and child development, for these disciplines are deeply concerned with the practical consequences of theory. Those dealing with children need access to theory and research from both the social and the behavioral sciences, and they need theory to explain and to evaluate their child care or educational practices.

In order to be useful, theory must (a) explain the dimensions of its concern, (b) explain the data or experiences upon which it is based, (c) have

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predictive power, and (d) guide future research and practice. The older classical theories fail on all four counts. Narrow in perspective and shallow in conceptualization, they reflect the influence of eras when children were viewed as little adults and childhood was not yet discovered. Based upon little systematic observation and no scientific data, the recapitulation, the surplus energy, the instinct-practice, and the relaxation theories are all ways of saying that play, like childhood, is unimportant.

Toward An Integrated Theory of Play

I should like to offer a modest proposal for a preliminary integrative theory of play that would change the pattern of theory building within disciplines to theory building across disciplines. Such an explanation must, of course, meet common criteria for theory. It would have the advantage of lending depth and breadth to understanding play and would provide practitioners with a comprehensive, utilitarian, and unified view of the phenomenon. Consequently, educators and child developmentalists might extract meaningful implications and interrelationships for practice in family, school and community contexts. An integrative explanation of play would not mitigate against continued theory building within disciplines or research on isolated dimensions of play: rather, it would use such data for its explanation and would be refined from continuing contributions.

It is proposed that play be explained from at least five interrelated perspectives: characteristics, motives, processes, functions, and content. We shall examine each of these in turn.

Characteristics of play

Play can be explained by its characteristics. The work of scientists of the past hundred years and of philosophers dating back to Plato has yet to

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yield a universally acceptable definition of play. There are three common ways of characterizing play.

The first is to identify characteristics without making any effort to exclude play from other human behaviors. This was the practice of philosophers/practitioners before the advent of scientific investigations. For example, they proposed that play is active, play is spontaneous, play is serious, play is instinctive, play is self-sufficient, play is natural unfolding, play is pleasurable (Sapora and Mitchell, 1948, p. 114). A major fault of this process is that the characteristics identified are not distinctive; human behaviors other than play contain elements of spontaneity, seriousness, and joy. Although it is acknowledged that play is active and pleasurable, surely these are present in differing degrees across play contexts. Finally, these early discussions are idealistic, and though not necessarily, they may be too vague for scholarly study.

A second method of characterizing play is to compare it with behavior that is not play. Among the primary human behavior, work comes closest to representing the antithesis of play. Although pure play and pure work may be theoretically possible, in practice play may contain elements of work and vice versa. Both Huizinga (1950) and Ellis (1973) identified the need to contrast play and nonplay and play and work, but neither proposed a scheme for doing it.

The two classes of human behavior, play and work, lie on a continuum with play at one end and work at the other end. Behaviors are more or less playful depending on the point at which they lie on that continuum. At some point play becomes work-play and eventually work. The use of such a continuum alleviates the problem of being unable to completely exclude play from other behaviors by allowing tendencies rather than absolutes.

(Insert Table 2 about here.)

Such a scheme is valuable for practitioners, because the activities of children can be classified as more playful or less playful, depending upon such factors as degree and nature of teacher involvement, source of the activity, and nature of materials used. An outdoor construction activity, wherein children are instructed by the teacher on the use of tools and the building of a rabbit hutch according to a scale drawing, would likely be less playful than a free-choice construction activity, wherein children make their own choices from a wide array of materials, procedures, and outcomes.

A third way of characterizing play is to narrow the domain of play to specific features borrowed from various theoretical perspectives. Examples of this approach are found in the work of Piaget, (1962, pp. 147, 150), Garvey, (1977), Rubin, Fein and Vandenberg (1983) and Almy (1984). An assumption of those using this approach is that play is a special activity with distinctive, though not exclusive, features that set it apart from other activities. Play, then, is explained as a disposition or tendency, determined by a certain orientation of the activity.

1. Play is a source of pleasure, evidenced by expressions of joy and excitement by the participants (Froebel, 1887; Groos, 1901; Valentine, 1942; Huizinga, 1950; Garvey, 1977).
2. Play is carried on for its own sake with emphasis on the play itself rather than its outcomes (Froebel, 1887; Groos, 1901; Patrick, 1916; Valentine, 1942; Huizinga, 1950; Piaget, 1962; Bruner, 1972).
3. Play is free of imposed rules or tasks (Huizinga, 1950; Bateson, 1955; Piaget, 1962; Schwartzman, 1978).

Frost: Table 2: Insert

Table 2

The Play-Work Continuum

Play is-- Work may be	Work/Play	Work may be-- Play is not
Intrinsically motivated	⟷	Extrinsically motivated
Active	⟷	Passive
Spontaneous	⟷	Forced
Fun	⟷	Drudgery
Process oriented	⟷	Goal oriented
Self-initiated	⟷	Other-initiated
Serious	⟷	Unconcerned

Note. Adapted from Children's Play and Playgrounds (p. 21) by J. L. Frost and B. Klein, 1984, Austin, TX: Playgrounds International (Reprinted from Boston: Allyn and Bacon, 1979). Copyright by J. L. Frost and B. L. Klein. Adapted by permission.

4. Play is intrinsically motivated (Huizinga, 1950; Berlyne, 1960; Bruner, 1972; Garvey, 1977; Schwartzman, 1978).
5. Play is spontaneous and voluntary (Patrick, 1916; Huizinga, 1950; Piaget, 1962; Garvey, 1977).
6. Play requires active involvement of the individual player (Piaget, 1962; Klinger, 1971; Garvey, 1977).

In addition to these characteristics of play in general, there are special characteristics, specific to types and stages of play, and there are effects of play that contribute to our understanding of the meaning and functions of play.

1. In symbolic or dramatic play characteristic of early childhood, play is a simulative, nonliteral, symbolic behavior that bridges the imaginary and real worlds and is characterized by an "as if" consciousness (Isaacs, 1933; Sutton-Smith, 1967; Reynolds, 1976; Fein, 1981).
2. In organized play or games with rules, characteristic of early and middle childhood, play is bound by rules (K. Buhler, 1937; Huizinga, 1950; Piaget, 1962).
3. From a therapeutic perspective, play is a means for overcoming fears, anxieties, and tensions (Klein, 1932; Isaacs, 1933; Axline, 1947; Erikson, 1950).
4. From educational/developmental perspectives, play is readiness. That is, play is a means for mastery of the environment and leads to readiness for further mastery.

Considerable evidence points to play as readiness. Examples follow:

Play provides <u>adaptive potentiation</u>. Through play, children develop cognitive prototypes (Sutton-Smith, 1967, 1977).

Through play, novel combinations are created and new strategies, applicable to novel situations, are developed (Bruner, 1972; Bruner, Jolly and Sylva, 1976).

Through play, the child assimilates objects to actions and these become mental schemas. These schemas are the functional equivalents of concepts and of the logical relationships of later development (Piaget, 1962).

Play is of deep significance, the germinal leaves of all later life (Froebel, 1887).

Play leads to discovery, verbal judgment, and reasoning. It is significant for manipulative skills, imaginative art, discovery, reasoning, and thought (Isaacs, 1933).

Play is necessary for culture. It actually becomes culture. Culture arises in the form of play. Civilization arises and unfolds in and as play (Huizinga, 1950).

Play with objects results in divergent production or more uses for objects (Sutton-Smith, 1968; Goodnow, 1969; Dansky, 1980a) and improves problem solving (Sylva, 1977; Smith and Dutton, 1979).

Divergent play experiences result in improvement in creative thinking (Pepler and Ross, 1981; Pepler, 1982).

Pretend play experiences result in improved problem solving (Sutton-Smith, 1968; Dansky and Silverman, 1973; Dansky, 1980a).

Play training for children enhances imaginative play (Smilansky, 1968; Feitelson and Ross, 1973; Smith and Syddall, 1978), creativity (Feitelson and Ross, 1973; Dansky, 1980b), language development (Vygotsky, 1967; Lovinger, 1974; Saltz et al., 1977) and group cooperation (Rosen, 1974; Smith and Syddall, 1978).

Play training for teachers enhances their interaction with children during play (Busse, Ree and Gutride, 1970; Singer and Singer, 1974; Wade, 1984).

Despite the rapidly expanding evidence that play influences or is associated with social, cognitive, and language abilities, the precise nature of these correspondences is yet to be identified. The evidence does indeed point to hypotheses that are useful both for future research and, in the absence of conflicting data, for present practice. There is no body of research or modern theory suggesting that play is not valuable or of no consequence. Investigators of play would likely agree that play is valuable in child development and that the research of the coming decade will further illuminate this fact.

Motives for play

Play can be explained by its motives. The earliest definitions and theories of play addressed the issue of why children play. Froebel (1887) believed that the aims of early play in children changed as they advanced in age, from the seeking of activity as such to representation as such. Through play, children are filled with joy, and their physical, intellectual, and moral power are fed. In the psychoanalytical tradition, Isaacs (1933) observed the motives of possession, power, rivalry, recognition, sexual impulses, and guilt in children's play. The early energy, the recapitulation, and the instinct-practice theories all implied a corresponding motive. The aims, respectively, were to rid oneself of excess energy, to recapitulate the history of the race, or to practice skills needed in later life.

Several of the more recent views of motives have roots in Pavlov's (1927) orienting reflex notions. The orienting reflex triggers an automatic response to changes in the environment. Appropriate receptor organs orient to

and investigate the source of the change. Drive theorists believe that learning results from the association of stimuli with responses that reduce basic drives, such as hunger, thirst, and sex. According to Berlyne (1960, 1969) and Hebb (1948) the organism seeks an optimum level of arousal. A low level of environmental stimulation results in boredom, and an excessive level of stimulation results in uncertainty and diverse exploration. In play situations when arousal reaches an optimum level, neither too high nor too low, play stops.

Berlyne (1969) also helped to place the concepts of internal and external motivation in perspective. Early studies of animals revealed that they often played just for the fun of it, even when basic drives such as hunger had been met. Berlyne proposed that intrinsically motivated behavior serves tissue needs. Play decreases arousal by increasing stimulation. From these perspectives, stimulus seeking is intrinsically motivated behavior aimed toward elevating arousal of the individual to an optimal level. Work, the corollary of play, is goal oriented, extrinsically motivated behavior aimed toward reducing arousal. Rather than attempting to force play to becoming a conceptual opposite of work, Ellis (1973) suggests facing the problem.

> A behavior may have many motives that are not mutually exclusive and an adequate explanation must recognize this. . . .It seems that pure play can occur only when all extrinsic consequences are eliminated and the behavior is driven on solely by intrinsic motivation. Pure play is probably only theoretically possible. (p. 110)

The formulations of Bateson (1955, 1956) give insight into how play aids cognitive development. Play and fantasy allow children to learn the process of framing and reframing roles and, to lesser extent, to learn the

specific roles they play. The play itself, then, is a more important factor than the roles being played out. Bateson's work has influenced other contemporary play researchers.

Bruner (1972) and Bruner, et al. (1976) contend that children can "safely" engage in play and, being freed of the constraints of concern, can explore, discover, and practice new behaviors. In playing out behaviors, novel combinations are created; through attention to means over ends, new strategies, applicable to novel situations, are developed. The views of Sutton-Smith (1967; 1977) about the importance of play in development parallel those of Bruner. He notes that play provides adaptive potentiation. Through play, children develop cognitive prototypes and associations that can be used in novel situations. In direct response to the question of motive ("why do children play?"), these contemporary views focus on play as an avenue for adaptive strategies or, if you will play as a medium for cognitive and social development.

Processes of play

Play can be explained by its processes or behaviors of children as they engage in play. These processes are frequently connected to areas of development presumed to be influenced by the play in question and are classified by some authorities across developmental periods. To exemplify, Piaget's (1962) explanation of play processes relates play and cognitive development. Consequently, his processes of play are typically categorized as cognitive processes or forms.

The first play of children, according to Piaget (1962), functional or exercise play, consists of simple repetitive actions or the infant's exercise of acquired behaviors. Through practice these behaviors give way to new motor responses and through adaptation become more complex and differentiated.

Functional play is, essentially, repeating an action for the fun of it. As children repeat actions such as shaking a rattle, they try new combinations and thus learn their physical capabilities and cause and effect relationships. Although the assumption is criticized (for evidence to the contrary exists), Piaget holds that functional play is the only type that occurs during the sensorimotor period. In order to understand or believe Piaget's view, it is necessary to understand that his is a developmental theory. Preliminary vestiges of play behaviors that are characteristic of later play are seen in earlier stages and are integrated into the play of later stages. This should not be taken as anathema, for such is the nature of human development in general.

With the onset of the preoperational stage (ages 2 - 7), two forms of play behavior are initiated: symbolic and constructive. Symbolic play (frequently called dramatic, imaginative, or make-believe play) is play behavior involving representation of an absent object or person--sitting in an empty box and imagining it is a space ship; putting on a cape and imagining he or she is Superman. Such play props symbolically become play materials or playgrounds of the mind. Common dramatic play themes are derived from imitation of parents, older siblings, and television heroes. In contrast to K. Buhler (1937) and Smilansky (1968), Piaget does not view construction play as a distinct stage of play. He maintains that construction play transcends other forms of play and occupies a position between play and work. In construction play, purposeless play gives way to purposeful play, resulting in creations or products. It is development from the manipulation of the functional stage to the formation of the construction stage.

As children enter the concrete operations period (7 - 11 years), their play takes on new dimensions, and games with rules emerge. They must accept

prearranged rules and adjust to them; they must control their behavior within limits, for penalties are exacted for breaking the rules. The writer's observations indicate that American children at age five are already involved in games with rules. Perhaps television and the American emphasis on competitive sports at an early age have created precocious children, as compared to Piaget's sample. Games with rules are indeed competitive, yet a degree of cooperation is also required, for children must bend their behavior to the rules of the game and the behavioral norms of the group. Particularly in team activities, such as football and basketball, cooperation is essential to winning.

In the 1930s, Bailey (1933) and Isaacs (1933) described the play behaviors of three-year-olds as they sought out live contact with other children in order to play with them. Isaac's work crossed over both cognitive and social processes of play. He considered imaginative and manipulative play as "the starting point which leads to the child's discovery, reasoning and thought" (p. 209), yet his studies also dealt extensively with the processes of social play.

In her now classic study, Parten (1932) observed that social participation of preschoolers increased with the child's age and set about to classify play. She defined five social play categories: onlooker behavior, solitary play, parallel play, associative play, and cooperative play. In onlooker behavior, the child watches other children play but does not enter overtly into the play; in solitary play, the child plays independently, without reference to what other children are doing; in parallel play, the child plays independently but with toys like those of the other children; in associative play, the child plays with other children but with no organization of the activity around goals or materials; in cooperative play the child plays

in a group that is organized for a particular purpose, such as dramatizing adult situations or playing a competitive game.

Both Piaget's and Parten's play categories have been used extensively by researchers and modified over time. These investigators include Shure (1963), Smilansky (1968), Seagoe (1970), Barnes (1971), Iwanaga (1973), Garvey (1974), Moore, Evertson and Brophy (1974), Rubin, Maioni and Hornung (1976), Tizard, Philps, and Plewis (1976), Rubin, Watson and Jambour (1978), Campbell and Frost (1978), Strickland (1979), Frost and Klein (1979; 1984), Henniger (in press), Myers (in press), Winter (in press), and Hutt (in press).

Such studies of the processes of play allow clearer understanding of how children play and result in implications for play leaders.

First, the nature of children's play across age and developmental levels is illuminated, particularly with respect to the types of cognitive and social play engaged in by infants, toddlers, preschoolers, and primary age children in various types of play environments. Such insight is valuable in the assessment and design of both indoor and outdoor environments, including material and equipment choices and in playground zoning choices appropriate to developmental levels of children.

Second, the nature and extent of sex differences during play, in varying contexts and across developmental levels, is better understood. Although sex differences in play are obvious, we are only beginning to understand their antecedents or, perhaps more importantly, to understand the dynamics of intervention. Should practitioners attempt to modify play environments and, consequently, change sex role behaviors? If so, in what ways? And for what specific changes?

Third, these studies are contributing to the development of methods and instruments for assessing play behaviors and play environments. These

methods and instruments identify physical environments that support or enhance particular forms of play, and they allow comparisons of play behaviors across levels of development.

Functions of play

Play can be explained by its functions, including cognitive, social, cultural, psychomotor, emotional, artistic, and educational, as studied, respectively, by the disciplines of psychology, sociology, anthropology, physical education, psychiatry, art, and education.

Over the years, a body of research and writing has accumulated within each of these disciplines and occasionally across disciplines, confirming and explaining the dynamic relationships between play and cognition, play and culture, play and art, and so on. For example, Vygotsky (1967) focused on play as an important element in cognitive development and theorized that play was an aid to representational thought. Piaget (1962) tied play to cognitive development in his assimilative view of play and intelligence.

> . . . assimilation of reality to sensory-motor schemas has two complementary aspects. On the one hand is active repetition and consolidation, and in this sense it is . . . growth through functioning. On the other hand, it is mental digestion, i.e., perception or conception of the object in so far as it is incorporated into real or possible action . . . it is by repeating his behaviors through reproductive assimilation that the child assimilates objects to actions and that these become schemas. These schemas constitute the functional equivalent of concepts and of the logical relationships of later development. (p. 161)

Theory about play and cognitive development is constantly being modified or supplemented by research. Play serves as a useful mirror of the development of symbolic representation (Rubin et al., 1982; Rubin and Pepler, 1980). In play, newly developed schemas (mental structures or abilities) are consolidated and strengthened (Fein, 1979; Saltz, 1980), and play directly influences cognitive and social development (Saltz and Brodie, 1982).

Content of play

Play can be explained by its content. The content of play can be classified into two major categories: concrete materials or equipment, and symbolic representations or imaginary symbols. Equipment includes large, manufactured, fixed structures, such as swings, seesaws, merry-go-rounds, climbers, and superstructures or combinations of such equipment. Electronic equipment includes videogames, television, electronic and mechanical vehicles, and computers. Play materials include manufactured, theme-specified materials, such as dolls and toy vehicles and theme-nonspecific materials, such as building blocks and Tinkertoys. Natural materials include trees, rocks, plants, and fluid materials, such as water and sand. Materials are used in both indoor and outdoor contexts. The larger, fixed equipment is usually installed only in outdoor playgrounds. If the function of play is no more than acting our animal origins, letting off excess energy, or practicing adult-type skills of bygone times, the most primitive types of playgrounds would serve very well. Consider those conceived in this country during the early 1900s. They were arenas of steel and concrete, featuring swings, slides, jungle gyms, seesaws, and merry-go-rounds, arranged in rows and suitable for only one form of play-exercise or practice. Such playgrounds remain the predominant pattern to this day--throwbacks to primitive, outmoded theory and hazardous and ill suited to the developmental needs of children.

In contrast, modern creative or adventure playgrounds accommodate the various processes of play. Functional play is enhanced by provision of exercise equipment. Dramatic play and symbolic representation are encouraged by a wide range of loose parts or portable materials to be used in combination with large structures, such as play houses, superstructures, and stripped volkswagens. Construction play uses tools, pieces of lumber and building blocks. Organized games, such as football and soccer, are played on separate flat, grassy areas, and games such as hopscotch and basketball are played on special hard surfaces. The same playground contains storage facilities for art, music, gardening, building, and other creative materials. Social processes are also enhanced. Solitary play occurs in out-of-the-way, partially-private areas; associative play and cooperative play in wheel vehicle play, sand and water play, play houses, and in organized games.

Conclusions

Play is a multi-faceted phenomenon and, as such, is the subject of inquiry in many disciplines including psychology, anthropology, sociology, child development, physical education, and education. None of these disciplines has explored the qualities of play in sufficient depth or exactness to develop a complete explanation of play. Each, however, has made substantial contributions toward this end, and the rapidly accumulating body of information gives a substantial basis for proposing an integrated theory of play.

There are numerous advantages of such a theory. A fully developed integrated theory of play can provide a comprehensive description of the qualities of play, point out interrelationships between those qualities, open up creative possibilities for the design of play environments, and serve as a

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sounding board or test for selecting play materials and for designing indoor and outdoor play environments.

Certain dimensions of play are commonly examined across disciplines and each gives a partial explanation of play. These dimensions include the characteristics of play, the motives of play, the processes of play, the functions of play, and the content of play. Examination of these interrelated dimensions can lend depth and breadth to understanding play and can result in a comprehensive, utilitarian, and unified view of the phenomenon.

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